

Blueshift - July 31, 2009

[intro music]

Sara: Welcome to the July 31, 2009 episode of Blueshift, brought to you from NASA's Goddard Space Flight Center. Every summer high school and college students from all over the country apply for internships right here at Goddard. Our offices fill up with interns collaborating on NASA projects with our staff. They get valuable experience and connections, and we get, well, we get some extra sets of hands. So we let some of this summer's interns put together this episode of Blueshift. And that's all I have to say - they took care of the rest.

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Svetlana: Do you remember your first gaze up at the night sky when you were probably 6? Or watching your first movie about traveling at warp speeds through space? Many of us have a story to tell about the first time we were inspired by the mystery of the universe and wanted to learn about it. But then, most of us have lost that sense of awe when "the real world" set in, somewhere around the time of college.

This has never been the case of some student interns right here at the Goddard Space Flight Center. Today, we'll tell you about what four of us interns here are doing, who haven't lost their inspiration for understanding the night sky and the Universe, who ARE in college. We are currently doing "real world" Research on distant stars, Saturn's moons, and even educating the public about space.

We're going to hear from Ashley Campbell, Emmanuel Fonseca, Val Klavans, and myself. Hi, I'm Svetlana Shkolyar. First things first, guys, why'd you choose to come to Goddard?

Ashley: I really really wanted to work at Goddard because it's basically astrophysics heaven.

Svetlana: I worked at Kennedy Space Center for a summer so I kind of had a general idea of what things around NASA were like. Like Ashley said, this is the astrophysics heaven.

Emmanuel: I do research with the Swift Gamma Ray Burst mission and the mission operations center for the Swift mission is actually a few minutes outside of my campus. Normally I don't see my boss because he's very busy, but as I was on my way out the door, he sees me and he's like "Oh, hey Emmanuel, hey, what's up, how're you doing, I haven't seen you in a while." We start talking and finally he was like, "Oh, well, we have a scientist working at Goddard who is looking for a student, do you want to work for them?" I was like "ok," and so I went from there, and that's how I'm here.

Val: Growing up, I watched a lot of Sci-Fi, and also I was really influenced by Carl Sagan's Cosmos TV series. I was generally really interested in science. When I was growing up, I went to a lot of Goddard Space Flight Center open houses.

Svetlana: Coming from a great internship at the Kennedy Space Center didn't compare to Goddard. Here we do everything from researching distant star systems to the moons of Saturn, right here in our solar system. Let's tell our listeners what our real world jobs are all about and why people should even care.

Ashley: I am working on a new project called NuSTAR and it's an X-ray telescope that will be viewing the sky at hard X-ray bandwidths, which previously we couldn't do because Chandra only does soft X-rays. So I'm currently looking at what this particular instrument might be able to see with its optics and so I'm doing some simulations and I'm creating some really cool images.

Svetlana: Most people around here do research but I work with a researcher who actually has some education and outreach grants on the side for Girl Scouts and I'm working to develop some manuals and activities for some of the Girl Scout badges related to space. I've always thought it's kind of important not only to do the research, to be trained in the research, but to be able to communicate that research.

Val: I am working on the Cassini mission, assisting scientists [to] understand Titan's atmosphere. Titan is a really unique moon. It's bigger than one of the planets, Mercury. The stuff that really interests me is how similar it is to Earth. It's the only other place in the Solar System beside Earth that has liquid lying on its surface, in terms of methane lakes and also methane rain.

Emmanuel: This summer I'm currently working on color and magnitude analysis of a particular globular cluster, called Omega Centauri. Basically I'm trying to enhance the data that they have obtained. Now I've just been doing the actual science part, like creating a bunch of these particular diagrams that reveal a lot about star's composition, age, metallicity, things like that. And it's important because aside from the fact that the stars towards the core have never been observed before until now, that particular globular cluster, Omega Centauri, is actually of particular interest to the community because there's a lot of evidence that it actually used to be a dwarf galaxy that collided with the Milky Way.

Svetlana: This is all great for now, but what do plan to do with this work? You're going to grad school, right? What are you going to research there?

Ashley: I'm going to be studying the chemical composition of lunar dirt, and writing an algorithm so that we can determine the mineralogy of the Moon on sight, so that we don't have to bring the dirt back with us.

Svetlana: And what about your long-term goals? What are you going to do in the real world?

Emmanuel: In the end I'd like to obtain a professorship because it allows me to do two things I really like doing. I like doing research, I really enjoy it. But I also like teaching people. A lot of my friends are like, "Oh my God, can you talk about this, can you talk about that," but I find it really interesting to divulge what I know and help them understand things that are otherwise counterintuitive and not easy to get.

Svetlana: I guess the short answer is, I would like to come back here to Goddard!

Ashley: It's real, it's down-to-Earth, real people doing real things, cutting edge.

Val: I guess for the future I really am wanting to get a PhD in astronomy and physics and I really want to work for NASA because it's been my dream ever since childhood to work at NASA. And I also would really like to also find life in the Universe and just explore the Universe to the fullest and get a really good understanding of what we're doing here and everything.

Svetlana: So there you have it. As you can see, each of us followed a different path to understanding that night sky we once looked up at when we were young. So there's no particular path to follow. We shared with you what inspired us, what we research right here at Goddard Space Flight Center, in "the real world," and how we plan to reach our research dreams. And who knows? Maybe we've inspired you to reach for the stars, too!

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Sara: I'd like to thank all of the interns who worked on this episode, including those who stayed behind the microphone. We've put more information online about some of the research the interns discussed, so visit our website at: universe.nasa.gov/blueshift.

You can also follow us on twitter as @NASABlueshift. Our interns will be leaving soon, but we'll be back in a couple of weeks with another episode. Until then, this is Sara Mitchell bringing the Universe closer to you with Blueshift.

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